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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/437,205	11/09/1999	ALEXANDER G. MACINNIS	36103/SAH/B6	7650

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EXAMINER
YANG, RYAN R

ART UNIT	PAPER NUMBER
2672	25

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/437,205	MACINNIS ET AL.	
	Examiner	Art Unit	
	Ryan R Yang	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23 and 25-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7,8,21,22,27,28,40 and 41* is/are allowed.

6)☒ Claim(s) *1-6,9-20,23,25,26 and 29-39* is/are rejected.

7)☒ Claim(s) *42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *23* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This action is responsive to communications: Amendment, filed on 4/11/03. This action is final.

2. Claims 1-23 and 25-42 are pending in this application. Claims 1, 21-23 and 41 are independent claims.

3. This application claims provisional application no. 60/107,875 filed on 11/09/1998.

4. The present title of the invention is "Graphics Display System With Anti-Aliased Text and Graphics Feature" as filed originally.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 6, 12 and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Law (6,133,901).

As per claim 1, Law discloses a method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution ("the blending weight of a fragment (often referred to as the alpha of a fragment) is equal to the convolution of a low pass

filter placed at the fragment's center with the line or point primitive", column 7, line 53-57); and

using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage ("The upper and lower limits are used to index the look-up table and return an upper limit value (alpha) and a lower limit alpha. These alphas correspond to samples of the integral of the filter profile ... to determine a fragment alpha, blending weight", column 3, line 53-60),

wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering (since the alpha values are generated after the filtering process, they are independent of alpha values prior to filtering).

7. As per claim 6, Law demonstrated all elements as applied in the rejection of independent claim 1, supra, and further discloses wherein the low pass filter is a box filter (Figure 4 see the Filter profile).

8. As per claim 12, Law demonstrated all elements as applied in the rejection of independent claim 1, supra, and further discloses the graphical element has a plurality of foreground colors, which are filtered using a low pass filter (column 8, line 23-27, where the fragment colors are foreground colors, which are filtered using a low pass filter).

9. As per claims 17 and 18, Law demonstrated all elements as applied in the rejection of independent claim 1, supra, and further discloses an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors and wherein the

filtered outline is used as an alpha per pixel value ("This integration yields a value which corresponds to the blending weight for the particular fragment. By blending the color of this fragment into the existing color of the pixel (e.g., stored in frame buffer 209), the fragment is antialiased", column 8, line 23-27, where the fragment color is foreground color).

Claim Rejections - 35 USC § 103

10. Claims 2-5 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Law (6,133,901), and further in view of Foley et al. (Computer Graphics: Principles and Practice).

As per claims 2-5, Law demonstrated all elements as applied in the rejection of independent claim 1, supra.

It is noted that Law does not explicitly disclose the graphical element is "initially rendered at a higher resolution than the intended final display resolution", and "is initially rendered at four times the resolution of the intended final display resolution in a horizontal axis", and "is initially rendered at four times the resolution of the intended final display resolution in a vertical axis", however, this is known in the art as taught by Foley et al., hereinafter, Foley. Foley discloses that in order to prevent damage caused by an inadequate initial sampling rate "a rule of thumb is that supersampling four times in each of x and y often will be satisfactory", page 643, line 4-5.

Thus, It would have been obvious to one of ordinary in the art at the time the invention was made to incorporate the teaching of Foley into Law in order to prevent image damage caused by inadequate sampling.

11. Claims 9-11, 13-16, 19-20, 23, 26 and 29-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Law (6,038,031).

As per claim 9, Law demonstrated all elements as applied in the rejection of independent claim 1, supra.

As for using "the alpha blend values include CLUT indexes, each CLUT index is associated with a CLUT entry, and each CLUT entry contains a CLUT alpha blend value", the method of using CLUT for blending color is notoriously well known in the art, therefore would have been obvious to use it for faster alpha blending.

12. As per claim 10, Law demonstrated all elements as applied in the rejection of independent claim 1, supra.

As for "the alpha blend values are used to form alpha portions of pixels having a color portion and an alpha portion", since it is notoriously well known that color values and alpha value are used together in blending operation, it is obvious it has a color portion as well as an alpha portion.

13. As per claim 11, Law demonstrated all elements as applied in the rejection of dependent claim 10, supra.

As for the pixels having color portions and alpha portions are in an alphaRGB (4,4,4,4) format, since the format is notoriously well known in the art, it would have been obvious to use it at the time of invention as a designer's choice of a well known format.

14. As per claim 13, Law demonstrated all elements as applied in the rejection of dependent claim 12, supra.

As for the filtered plurality of foreground colors are used as color portions of pixels having a color portion and an alpha portion, since it is notoriously well known that color values and alpha value are used together in blending operation, it is obvious that it has a color portion as well as an alpha portion.

15. As per claim 14, Law demonstrated all elements as applied in the rejection of dependent claim 13, supra.

As for the pixels having a color portion and an alpha portion are in an alphaRGB format, since the format is notoriously well known in the art, it would have been obvious to use it at the time of invention as a designer's choice of a well known format.

16. As per claim 15, Law demonstrated all elements as applied in the rejection of dependent claim 13, supra.

As for the pixels having a color portion and an alpha portion are in an alphaYUV format, since the YUV format is an alternate color coding system in the computer graphics industry, It would have been obvious to one of ordinary in the art at the time the invention was made to also incorporate the alternate format.

17. As per claim 16, Law demonstrated all elements as applied in the rejection of dependent claim 12, supra.

As for the filtered plurality of foreground colors are used as color choices in a CLUT format, since the method of using CLUT for blending color is notoriously well known in the art, therefore would have been obvious to use it for faster color blending.

18. As per claim 19, Law demonstrated all elements as applied in the rejection of dependent claim 18, supra.

As for the filtered outline is used as the alpha per pixel value in a direct color format, the direct color format including an alphaRGB format, the format is notoriously well known in the art and would have been obvious to use it at the time of invention because it is a designer's choice of a well known format.

19. As per claim 20, Law demonstrated all elements as applied in the rejection of dependent claim 18, supra.

As for the filtered outline is used as a choice of an alpha value per CLUT entry in a CLUT format, the method of using CLUT for blending color is notoriously well known, therefore would have been obvious to use it for faster color blending.

20. As per claim 23, Law discloses a graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution ("the blending weight of a fragment (often referred to as the alpha of a fragment) is equal to the convolution of a low pass filter placed at the fragment's center with the line or point primitive", column 7, line 53-57);

wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering (since the alpha values are generated after the filtering process, they are independent of alpha values prior to filtering).

As for display buffer and display engine, these devices are notoriously known in the art and would have been obvious to use them at the time the invention was made in order to display the image.

21. As per claim 25, Law demonstrated all elements as applied in the rejection of independent claim 23, supra.

It is noted that Law does not explicitly disclose the graphical element is "initially rendered at a higher resolution than the intended final display resolution", however, this is known in the art as taught by Foley. Foley discloses that in order to prevent damage caused by an inadequate initial sampling rate "a rule of thumb is that supersampling four times in each of x and y often will be satisfactory", page 643, line 4-5.

22. As per claim 26, Law demonstrated all elements as applied in the rejection of independent claim 23, supra, and further discloses wherein the low pass filter is a box filter (Figure 4 see the Filter profile).

23. As per claim 29, Law demonstrated all elements as applied in the rejection of independent claim 23, supra.

As for including CLUT indexes in alpha blending, the method is notoriously in the art, therefore would have been obvious to use it for faster alpha blending.

24. As per claim 30, Law demonstrated all elements as applied in the rejection of independent claim 23, supra.

As for "the alpha blend values are used to form alpha portions of pixels having a color portion and an alpha portion", since it is notoriously well known that color values

and alpha value are used together in blending operation, it is obvious it has a color portion as well as an alpha portion.

25. As per claim 31, Law demonstrated all elements as applied in the rejection of dependent claim 30, supra.

As for the pixels having color portions and alpha portions are in an alphaRGB (4,4,4,4) format, the format is notoriously well known in the art and would have been obvious to use it at the time of invention because it is a designer's choice of a well known format.

26. As per claim 32, Law demonstrated all elements as applied in the rejection of independent claim 23, supra.

As for the graphical element has a plurality of foreground colors, which are filtered using a low pass filter (column 8, line 23-27, where the fragment colors are foreground colors, which are filtered using a low pass filter).

27. As per claim 33, Law demonstrated all elements as applied in the rejection of dependent claim 32, supra.

As for the colors are used as color portions of pixels having a color portion and an alpha portion, since it notoriously well known that the color is represented in RGBA format it is obvious that it has a color portion and an alpha portion.

28. As per claim 34, Law demonstrated all elements as applied in the rejection of dependent claim 33, supra.

As for the pixels having a color portion and an alpha portion are in an alphaRGB format, since the representation is notoriously well known in the art and would have

been obvious to used it at the time the invention was made in order to represent an alpha blending value.

29. As per claim 35, Law demonstrated all elements as applied in the rejection of dependent claim 33, supra.

As for the pixels having a color portion and an alpha portion are in an alphaYUV format, the representation is notoriously well known in the art and would have been obvious to used it at the time the invention was made in order to represent an alpha blending value.

30. As per claim 36, Law demonstrated all elements as applied in the rejection of dependent claim 32, supra.

As for the filtered plurality of foreground colors are used as color choices in a CLUT format, since the method of using CLUT for blending color is notoriously well known in the art, therefore would have been obvious to use it at the time the invention was for faster color blending.

31. As per claims 37 and 38, Law demonstrated all elements as applied in the rejection of independent claim 23, supra, and further discloses wherein an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors and wherein the filtered outline is used as an alpha per pixel value ("This integration yields a value which corresponds to the blending weight for the particular fragment. By blending the color of this fragment into the existing color of the pixel (e.g., stored in frame buffer

209), the fragment is antialiased", column 8, line 23-27, where the fragment color is foreground color).

32. As per claim 39, Law demonstrated all elements as applied in the rejection of dependent claim 38, supra.

As for the filtered outline is used as the alpha per pixel value in a direct color format, the direct color format including an alphaRGB format, the format is notoriously well known in the art and would have been obvious to use it as the time of invention because it is designer's choice of a well known format.

Allowable Subject Matter

33. Claim 42 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7, 8, 21, 22, 27, 28, 40 and 41 are allowed.

Response to Arguments

34. Applicant's arguments filed 4/11/2003 have been fully considered but they are not persuasive.

As per claims 1 and 23, Applicant alleges that "the samples of the integral of the impulse response has to do with a filter profile and should not be equated with a multi-

level value per pixel generated by filtering the graphical element with a low pass filter". In reply, Examiner notes "the blending weight of a fragment (often referred to as the alpha of a fragment) is equal to the convolution of a low pass filter placed at the fragment's center with the line or point primitive" (column 7, line 53-56) certainly qualify as a filtering process. From this process, alpha value of a fragment is generated. Since the alpha value is generated from the filtering process, it is different from the alpha value before the process, and since a fragment is only part of a pixel, a pixel will have multi-level values.

Conclusion

35. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiries

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ryan Yang** whose telephone number is **(703) 308-6133**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-47000377.

Ryan Yang
June 12, 2003

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600